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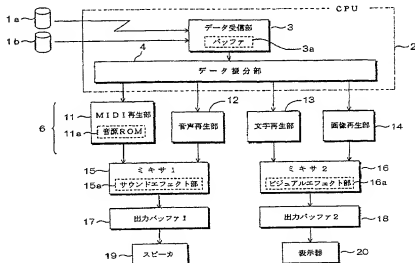
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(54) Title: DATA REPRODUCING DEVICE, DATA REPRODUCING METHOD, AND INFORMATION TERMINAL

(54) 発明の名称 データ再生装置、データ再生方法および情報端末機

(57) Abstract

Data on MIDI, audio, text and image received by a data receiving unit (3) are data in the SMF format including event information and delta time for executing an event. A data sorting unit (4) sorts the received data according to the kind on the basis of the delta times of the data. The sorted data is reproduced by an MIDI reproducing unit (11), an audio reproducing unit (12), a text reproducing unit (13) and an image reproducing unit (14). The data reproduced by the MIDI reproducing unit and the audio reproducing unit is mixed by a mixer (15) and outputted as sound from a loudspeaker (19), and the data reproduced by the text reproducing unit and the image reproducing unit is mixed by a mixer (16) and displayed as visible information on a display unit (20). The data is reproduced at timings according to the delta times, so that the data of different kinds such as audio and video can be easily synchronized.



- |                              |                           |
|------------------------------|---------------------------|
| 3... DATA RECEIVING UNIT     | 15... MIXER 1             |
| 3a... BUFFER                 | 15a... SOUND EFFECT UNIT  |
| 4... DATA SORTING UNIT       | 16... MIXER 2             |
| 11... MIDI REPRODUCING UNIT  | 16a... VISUAL EFFECT UNIT |
| 11a... SOUND SOURCE ROM      | 17... OUTPUT BUFFER 1     |
| 12... AUDIO REPRODUCING UNIT | 18... OUTPUT BUFFER 2     |
| 13... TEXT REPRODUCING UNIT  | 19... LOUSPEAKER          |
| 14... IMAGE REPRODUCING UNIT | 20... DISPLAY UNIT        |

## ABSTRACT

Each data in MIDI, audio, text and images to be received in a data receiving section (3) is SMF-formatted data including event information and event-executing delta time. A data assorting section 4 assorts data on a kind-by-kind basis depending upon a delta time of each of received data. The assorted ones of data are respectively reproduced in a MIDI reproducing section (11), an audio reproducing section (12), a text reproducing section (13) and an image reproducing section (14). The data reproduced in the MIDI reproducing section and audio reproducing section is mixed in a mixer (15) and outputted as sound from a speaker (19), while the data reproduced in the text reproducing section and image reproducing section is mixed in a mixer (16) and displayed as visible information on a display (20). Because each of data is reproduced in the timing according to the delta time, synchronization can be easily provided between different kinds of data, as sound and images.

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